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ABSTRACT

This study examined the theoretically related constructs of children's empathy, affective responsiveness, and altruistic helping. Subjects were 80 nine-year-olds. Empathy was assessed using interviews with children regarding their understanding of the emotion portrayed in, and their own emotional-cognitive responses to, a set of seven videotaped stimulus vignettes of persons in emotional interaction. Responses were scored along an Empathy Continuum (EC). A median split on EC scores assigned children into high or low empathy groups. Second, emotional responsivity was assessed in the Affect Match (AM) Experiment in which children viewed video episodes of four same-sex peers, each responding to a test-game, in which they were happy or sad about winning or losing. AM scores were the degree of affect match reported by the child. Third, altruistic helping was assessed in the Helping Experiment, in which children viewed a same-sex peer (a confederate) who was completing a test-game in another room, visible to the subject via TV monitor. The subject's helping responses over 10 trials were noted. The findings indicated that responses in the Affect Match Experiment were significantly higher for children with high versus low empathy. Responses were significantly greater for congruent than incongruent affect cues (happy/win versus happy/lose). There were no differences between responses to situational (win, lose) versus expressive (happy, sad) cues. Altruistic helping was greater for children with high versus low empathy. (Contains 21 references.) (KDFB)

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Children's Emotional and Helping Responses as a Function of Empathy and Affective Cues

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Children's Emotional and Helping Responses as a Function of Empathy and Affective Cues

Children in middle childhood (N = 80, 40 boys, 40 girls; M age = 114 months, SD = 3.5 months) participated individually in separate procedures measuring their empathy, affect match, and altruistic helping. Present findings supported the three main hypotheses. Anova results for the Affect Cues Experiment [2 expressive (happy, sad) x 2 situational (win, lose) emotion stimulus cues] indicated that "affect match" responses (concordant affect in both participant and stimulus child) were significantly greater for children independently assessed with high versus low empathy (median split on Empathy Continuum), especially for congruent (happy-win, sad-lose) cues. Findings also supported views of empathy as motivating prosocial behavior: helping at a cost to oneself was significantly greater for children with high versus low empathy. Lastly, cue conditions influenced affective responses in predicted ways across children: affect match responses were significantly greater for congruent than incongruent (happy-lose, sad-win) cues. However, amount of helping did not differ significantly as a function of affective cues (i.e., the sad-lose stimulus versus others).

Children's Emotional and Helping Responses as a Function of Empathy and Affective Cues

Children's empathy, affective responsiveness and altruistic helping were investigated in order to gain greater understanding of their theoretically related functioning. Empathy conjointly entails the affective-cognitive experience of concordant affect in response to another's affect (Eisenberg & Strayer, 1987). The operationalization of the empathy construct thus entails the mutual assessment of affect and its cognitive mediation (Strayer, 1987, 1993) and requires the assessment of both affect and its cognitive mediation . Empathy was assessed using a previously validated procedure (EC) that scores affect and its cognitive attributions in response to (videotaped) stimulus persons in quasi-naturalistic emotional interactions (Strayer, 1993). Children's independently assessed empathy was expected to influence both their affective responsiveness in the Affect Cues Experiment and their altruistic helping in the Helping Experiment.

Children with high versus low empathy (based on a median split for EC scores across seven stimulus vignettes) were hypothesized to be more affectively responsive in the Affect Cues Experiment. This difference was expected because concordant affect is integral to empathy as "shared emotion" (Feshbach, 1975; Hoffman, 1977a) and given previous findings that empathic persons are attentive to and aroused by others' emotions (Chisholm & Strayer, 1995; Goldstein & Michaels, 1985; Roberts & Strayer, 1996; Strayer & Roberts, in press; Stotland, 1969).

The Affect Cues Experiment also served as the method for assessing the effects of controlled stimulus cues on children's "affect match" responses, i.e., concordant affect reported for both participant and stimulus child. Children observed each of four, same-sex peers in a test-game situation in which the stimulus child's facial expressive cues to emotion (happy or sad) were crossed with situational cues to emotion (winning or losing the test-game). In addition to assessing the impact of high versus low empathy on affective responsiveness, the design of the Affect Cues Experiment permitted assessment of the possible differential effects of facial expressive versus situational cues to emotion, tested in an 2 (high/low empathy) x 2 (boys, girls) Anova with repeated measures for 2 expressive (happy/sad) and 2 situational (win/lose) cues to the stimulus child's emotion. In addition to investigating such possible differences, we hypothesized (planned comparisons) that congruent emotion cues (happy-win, sad-lose) cues would elicit greater affect match responses than incongruent emotion cues (happy-lose, sad-win). This hypothesis was based upon the greater cognitive clarity and greater emotional evocativeness of congruent (multimodal, redundant) cues (Hughes, Tingle & Sawin, 1981; Wallbott, 1988). In contrast,

incongruent cues create dissonance between the two information sources (expression and situation), increasing the cognitive demands and often resulting in confusion, distraction, or a search for cognitive clarity before concordant affect can be engaged (Casey, 1993; Smither, 1977).

In a second experiment, the Helping Experiment, children with high versus low empathy were hypothesized to be more helpful (at a cost to themselves), based upon empathy's motivation of altruistic behavior (Batson & Coke, 1981; Hoffman, 1977a). Participant children could help a stimulus child "learn" the correct responses on a task lasting 10 trials. Children (equal numbers, randomly assigned) responded to one of the four stimulus children previously observed in the Affect Cues Experiment , and the same condition was repeated (e.g., the stimulus child was again shown to be sad when losing or happy when losing, etc.). In addition to hypothesized differences in helping as a function of children's empathy, helping was expected to differ for all children as a function of the affective stimulus cues. Greatest helping was expected in response to the sad-lose stimulus child, thought to represent the clearest "need" (Carlo, Knight, Eisenberg, & Rotenberg, 1991; Pearl, 1985).

Gender-related differences were examined for all measures. Based on previous findings, we expected that, if there were sex differences in empathy, affect match, or helping behaviors, these differences would favor girls over boys (Eisenberg & Miller, 1987; Hoffman, 1977b).

The following material summarizes the constructs and hypotheses in this investigation and duplicates the material presented in the poster format at SRCD (1997, Washington, D.C)

Purpose of Study

To investigate 3 theoretically related variables:

Empathy: concordant affect and cognitive mediation responsive to another's affective context ; via stimulus videotapes and Empathy Continuum scoring (EC,Strayer,1993)

Emotional Responsiveness: own emotion matches the stimulus person's ; assessed in a 4-cell Affect Match Experiment presenting same-sex peers' expressed emotion (happy, sad) by situation (win, lose) cues.

Prosocial Responses: helping a child, at a cost to oneself, in a 10-trial Helping Experiment (score = 0-10), presenting one of the above stimulus children.

Hypotheses

EMPATHY (INDEPENDENTLY ASSESSED EC) WILL PREDICT EMOTIONAL RESPONSIVITY IN THE AFFECT-MATCH EXPERIMENT:

- High Empathy vs. Low Empathy children will show greater affect match across 4 experimental cells

EMPATHY (EC) WILL PREDICT HELPING IN THE PROSOCIAL EXPERIMENT:

- High Empathy vs. Low Empathy children will help more, at a cost to themselves, across 4 experimental cells
- Most help will occur for the Lose - Sad cell

AFFECT MATCH RESPONSES TO EXPERIMENTAL CELLS WILL PREDICT HELPING IN THE PROSOCIAL EXPERIMENT:

- Children with higher Affect Match scores will help more across the 4 experimental cells

AFFECT MATCH (AM) RESPONSES WILL DIFFER AS A FUNCTION OF STIMULUS CUES:

- Greater AM for Emotional Expression (Happy, Sad) than Situational cues (Win, Lose)

- Congruent (Happy-Win, Sad-Lose) vs. Incongruent cues (Happy-Lose, Sad-Win) will facilitate greater Affect Match

Comparative Constructs

EMPATHY (EC) AND AFFECT MATCH (AM)

Similarities

Both EC and AM measure concordant emotional responsiveness: Participant child identifies feeling the same or similar emotion as the stimulus child.

Differences

Stimuli:

- EC is sampled across a range of emotionally-evocative interactions presented in 7 quasi-naturalistic videotaped vignettes (see Table 1)
- AM is sampled for a controlled stimulus set, manipulating expressed emotion (happy, sad) and context (win, lose).

Scoring:

- Empathy is assessed as an affective-cognitive construct (EC), jointly entailing affective match and cognitive mediation.
- Affective Match assesses only concordant affect. AM is assumed to be necessary but insufficient for empathy.

Method

Participants

N = 80 9-year-olds: 40 boys, 40 girls; volunteered in response to community announcements; middle class; 90% European-Canadian, 10% Asian-Canadian.

Individual administration:

1. EMPATHY CONTINUUM (EC) (~30 min.)

Child individually views and is interviewed for emotional-cognitive responses to a set of 7 videotaped stimulus vignettes of persons in emotional interactions (Strayer, 1993; see Table 1).

Child identifies stimulus person's emotion, own emotion (if any) and reason for it. EC scores (0-19) both affect match and cognitive attribution for child's concordant emotion with stimulus person's (see Table 2).

Median split on EC scores assigns girls and boys into High Empathy or Low Empathy group.

Break (15 min.)

2. Affect Match Experiment (~15 min.)

Child views pretested video episodes of 4 same-sex peers, each responding to a test-game.* The test-game is explained to the child, who checks out a similar test-apparatus in his/her control.

*_Test Game:_ The peer is shown pressing 1 of 4 colored buttons on a response box, corresponding to a colored bulb that s/he thinks will light for that trial. Scores for each trial are recorded on a large Win versus Lose wall chart. At the end of 10 trials, the total score is shown (win= 8/10; lose= 2/10) and a close-up of the peer's happy/sad face. [Across stimuli, children correctly identified the test score (win,lose) and all but 1 exactly identified the emotion.]

AM scores = degree of affect match reported by child (0 = no ,or discrepant, emotion, 1=similar in valence, 2 = same emotion but diff. intensity, 3 =same emotion + same intensity; Total = 0 - 12 across 4 stimulus cells.

3. Helping Experiment (~15 min.)

10 trials: score = 0-10; Cost for helping= 25 ¢ a trial: Child pays or keeps 0 -$2.50 total.

Child is randomly assigned to one of 4 conditions in which s/he views a same-sex peer previously seen in 1) happy-win; 2) happy-lose, 3) sad-win, or
4) sad-lose context.

The stimulus peer (C, confederate) has started the test again in another room, visible to the subject child (S) via TV monitor. S can help C by relaying the correct response for each trial via S's response box. S can see his/her response relayed to C's response box, causing C to win or lose on that trial. If S does not respond or sends a false response, C loses. If S helps by sending a correct response, C wins and S pays 25¢.

Results

SUPPORTED: Empathy (EC) & Affect Match

Anova: EC (2), Sex (2) by Emot.(2), Sit.(2) :

Empathy Main Effect: Greater affect match across 4 experimental cells for children in the High Empathy (M =.90, SD = 1.0) vs. Low Empathy (M = .50, SD = .80) group (see Table 3) ...

Empathy by Stimulus Cues Interaction: AM greater for congruent (e.g.,happy-win) than incongruent (e.g., happy-lose) stimuli, especially for High Empathy children (see Fig.1).

SUPPORTED: Empathy (EC) & Helping:

Children in the High Empathy/EC group provided more prosocial responses in the Helping Experiment (M = 2.6, SD = 1.7) than did the Low Empathy group(M = 1.6, SD = 1.9) (see Table 4).

NOT SUPPORTED: Affect Match & Helping:

Children with higher scores on the Affect Match Experiment did not provide more help in the Helping Experiment.

SUPPORTED: Affect Match & Stimuli:

Greater Affect Match occurred as a function of congruent vs. incongruent stimuli (see col. 3, Table 3 and Figure 2).

ALTERNATIVE NOT SUPPORTED: Affect Match & Stimuli:

Greater Affect Match did not occur to Emotion Expressive vs. Situation cues. (see col. 3, Table 3).

NOT SUPPORTED: Helping and Stimuli:

Greater helping across children did not occur in response to the sad-lose cell. However, for the high-empathy group, the highest mean helping responses occurred in response to this cell.

OTHER FINDINGS: Sex Differences?

Empathy (EC scores) did not differ significantly for girls and boys ($p > .10$).

Affect match (AM scores) did not differ significantly for girls and boys ($p > .10$).
Helping scores were significantly greater for girls (M = 2.7, SD = 1.6) than boys (M =1.6, SD = 1.4), $p < .01$.

Table 1. *Empathy Continuum (EC) Stimuli*

Old House: Children sneak into the yard of an old house in the dark. A boy climbs up creaking porch stairs. A looming shadow appears. The children run away.

Spilled Milk: Parents argue. The father leaves, slamming the door.The mother shouts at the daughter, who knocks over a glass of milk and is slapped.

Jeannie: In close-up, a woman is shown reporting the harsh life she and her children had on an isolated farm with her abusive husband.

Skates: A girl and boy argue over taking turns on her new skates. The boy insults her and she pushes him down. The boy lies to the father about what happened, and the girl is punished by having to give away her skates to the boy.

Newspaper: A girl who is sent to her room, as punishment, is shown crying while the father tries to remain firm.

Canes: A physically disabled girl talks pleasantly about her life and fun. She then tries, with difficulty, to walk with canes while continuing to joke with her physiotherapist.

Circus: A girl smiles and jumps as she watches a circus elephant do tricks. She is then treated to a ride on the elephant's trunk.

Table 2

The Empathy Continuum (EC): Emotional–Cognitive Scoring System

EC score	Cognitive level	Affect match	Affect match for S and SP	Emotional attribution
0	0	0	No emotion for SP	No affect match requiring attribution
1	1	0	Accurate SP emotion	
2	2	1	Similar emotion for S–SP	No, or irrelevant attribution: "I didn't like it."
3		2	Same emotion, different intensity	
4		3	Same emotion, same intensity	
5	3	1	Similar emotion for S–SP	Events only: "I felt angry because the ending could go either way."
6		2	Same emotion, different intensity	
7		3	Same emotion, same intensity	
8	4	1	Same as above	SP-in-event: "I felt happy because even with her handicap, she was working on it."
9		2		
10		3		
11	5	1	Same as above	Association to SP's experience: "I felt angry when the mother hit the girl because I've been treated like that too."
12		2		
13		3		
14	6	1	Same as above	Reference to SP's internal state: "I felt sad because she felt so put down."
15		2		
16		3		
17	7	1	Same as above	Explicit perspective taking: "I'd be sad, too, in his place with nowhere to go."
18		2		
19		3		

Note. S = self-reported emotion; SP = stimulus person. The EC scoring system is adapted from Strayer (1993).

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Table 3. *High/Low Empathy Groups' Mean (SD) Scores in Affect Match Experiment*

Stimulus Cells:	High Empathy (n=40)	Low Empathy (n=40)	All (N=80)
Happy-Win	1.58 (1.36)	0.68 (1.07)	1.13 (1.30)
Sad-Lose	1.18 (1.13)	0.50 (0.91)	0.81 (1.08)
Happy-Lose	0.73 (1.22)	0.53 (1.01)	0.63 (1.12)
Sad-Win	0.25 (0.54)	0.10 (0.38)	0.20 (0.49)

Table 4. *Helping as a Function of High/Low Empathy and Experimental Stimuli*

Stimulus Cells:	High Empathy (n=40)	Low Empathy (n=40)
Happy-Win	2.50 (1.70)	1.90 (2.70)
Sad-Lose	3.10 (1.60)	0.80 (1.50)
Happy-Lose	2.30 (1.40)	1.20 (1.40)
Sad-Win	2.50 (2.00)	2.50 (1.70)

Conclusions

Present findings supported the three main hypotheses. Anova results indicated that responses in the Affect Cues Experiment were significantly higher for children with high versus low empathy, differences that were consistent within each experimental cell. In addition, cue conditions influenced affective responses in predicted ways across children: Responses were significantly greater for congruent than incongruent affect cues. No significant differences occurred for situational versus expressive cues, consistent with research findings indicating that children can integrate both sources of information (Gnepp, 1983) but not supportive of views suggesting that empathy is more responsive to expressive than situational affective cues (Iannotti , 1975). Lastly, present findings supported the contention that empathy motivates prosocial behavior (Batson & Coke, 1981; Hoffman, 1977). Altruistic helping was significantly greater for children with high versus low empathy. The expectation of greatest helping in response to sad-lose stimulus compared to others was not supported across children. Nevertheless, this stimulus cell did receive the highest mean helping responses from the high-empathy children.

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